

WHAT IS CLAIMED IS:

1. A dual frame buffer system, comprising:  
a first frame buffer;  
a second frame buffer; and  
a controller for copying data from the first frame buffer to the second  
5 frame buffer when data is changed in the first frame buffer and data is needed for  
refreshing the display monitor.
2. The dual frame buffer system claimed in claim 1, wherein the controller  
further comprises copying the data simultaneously from the first frame buffer to  
the second frame buffer.
3. The dual frame buffer system claimed in claim 1, further comprising:  
a first address generator corresponding to the first frame buffer;  
a second address generator corresponding to the second frame buffer; and  
a timing generator for coordinating the timing between the first and  
5 second address generators for refreshing the display monitor.
4. The dual frame buffer system claimed in claim 3, further comprising:  
a detector for detecting when an update is made to the data in the first  
frame buffer; and  
a decoder for decoding the location of the updated data, wherein the  
5 controller transmits the updated data from the first frame buffer to the second  
frame buffer when the display is refreshed.
5. The dual frame buffer system claimed in claim 4, wherein the first frame  
buffer comprises a plurality of regions.

6. The dual frame buffer claimed in claim 5, wherein the controller transmits those regions corresponding to the updated data from the first frame buffer to the second frame buffer when the display is refreshed.

7. The dual frame buffer claimed in claim 1, wherein the first frame buffer is part of a unified memory architecture.

8. The dual frame buffer claimed in claim 7, wherein the second frame buffer stores data used to refresh the display monitor.

9. A unified memory architecture system comprising:

a unified memory including a main memory and a primary frame buffer memory;

a secondary frame buffer memory; and

a controller for copying pixel data from the primary frame buffer memory to the secondary frame buffer memory when pixel data is changed in the primary frame buffer memory and needed for refreshing the display monitor.

10. The system claimed in claim 9, wherein the controller further comprises transmitting the pixel data simultaneously from primary frame buffer memory to the secondary frame buffer memory.

11. The system claimed in claim 10, further comprising:

a primary address generator corresponding to the primary frame buffer memory;

a secondary address generator corresponding to the secondary frame buffer memory; and

a timing generator for coordinating the timing between the primary and secondary address generators for refreshing the display monitor.

12. The system claimed in claim 11, further comprising:

a detector for detecting when an update is made to the pixel data in the primary frame buffer memory; and

a decoder for decoding the location of the updated pixel data, wherein the controller transmits the updated pixel data from the primary frame buffer memory to the secondary frame buffer memory when the display is refreshed.

13. The system claimed in claim 12, wherein the primary frame buffer memory is partitioned into a plurality of regions.

14. The system claimed in claim 13, wherein the controller transmits those regions containing the updated pixel data from the primary frame buffer memory to the secondary frame buffer memory when the display is refreshed.

15. A method of refreshing a display, comprising:

identifying data which is changed in a first frame buffer memory;

providing the data to a display controller; and

copying data from a first frame buffer memory to a second frame buffer memory when data is changed in the first frame buffer memory and needed for refreshing the display.

16. The method claimed in claim 15, further comprising:

transmitting the pixel data simultaneously from the first frame buffer memory to the second frame buffer memory.

17. The method claimed in claim 15, further comprising:

detecting when an update is made to the pixel data in the first frame buffer memory; and

decoding the location of the updated pixel data; and

transmitting the updated pixel data from the first frame buffer memory to the second frame buffer memory when the display is refreshed.

18. The method claimed in claim 15, further comprising:  
partitioning the first frame buffer memory into a plurality of regions.
19. The method claimed in claim 19, further comprising:  
transmitting those regions containing the updated pixel data from the first  
frame buffer memory to the second frame buffer memory when the display is  
refreshed.
20. The method claimed in claim 15, wherein the first frame buffer memory is  
part of a uniform memory architecture memory.
21. A computer product for refreshing a display, comprising:  
first computer readable program code embodied in a computer usable  
medium to cause a computer to identify data which is changed in a first frame  
buffer memory;  
5 second computer readable program code embodied in a computer usable  
medium to cause a computer to provide the data to a display controller; and  
third computer readable program code embodied in a computer usable  
medium to cause a computer to copy data from a first frame buffer memory to a  
second frame buffer memory when data is changed in the first frame buffer  
10 memory and needed for refreshing the display.
22. The computer product claimed in claim 21, further comprising:  
third computer readable program code embodied in a computer usable  
medium to cause a computer to transmit the pixel data simultaneously from the  
first frame buffer memory to the second frame buffer memory.
23. The computer product claimed in claim 21, further comprising:

third computer readable program code embodied in a computer usable medium to cause a computer to detect when an update is made to the pixel data in the first frame buffer memory; and

5 fourth computer readable program code embodied in a computer usable medium to cause a computer to decode the location of the updated pixel data; and

fifth computer readable program code embodied in a computer usable medium to cause a computer to transmit the updated pixel data from the first frame buffer memory to the second frame buffer memory when the display is refreshed.

10 24. The computer product claimed in claim 21, further comprising:

third computer readable program code embodied in a computer usable medium to cause a computer to partition the first frame buffer memory into a plurality of regions.

25. The computer product claimed in claim 21, further comprising:

third computer readable program code embodied in a computer usable medium to cause a computer to transmit those regions containing the updated pixel data from the first frame buffer memory to the second frame buffer memory when the display is refreshed.